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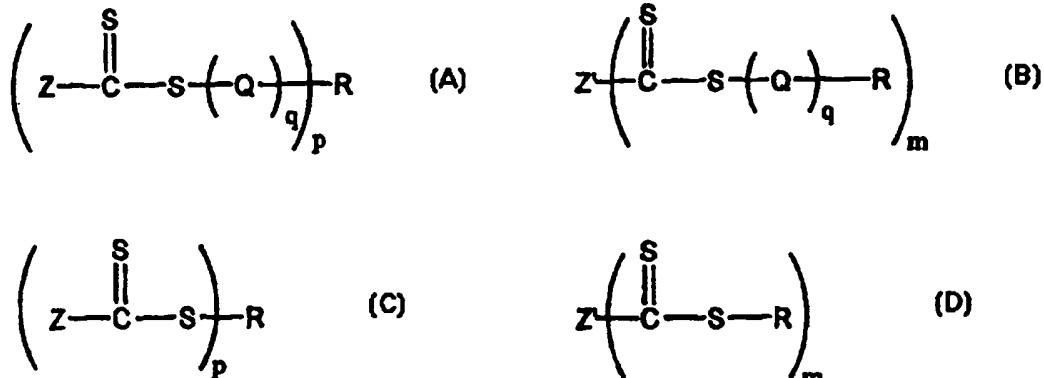
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(71) Applicant (for all designated States except US): E.I. DU PONT DE NEMOURS AND COMPANY [US/US]; 1007 Market Street, Wilmington, DE 19898 (US).		
(72) Inventors; and (75) Inventors/Applicants (for US only): LE, Tam, Phuong [AU/AU]; 18 Quist Court, Mill Park, VIC 3082 (AU). MOAD, Graeme [AU/AU]; Bellamay 137, Monbulk Road, Kallista, VIC 3791 (AU). RIZZARDO, Ezio [AU/AU]; 26 Alex Avenue, Wheelers Hill, VIC 3150 (AU). THANG, San, Hoa [AU/AU]; 180 Clarinda Road, Clayton South, VIC 3169 (AU).		
(74) Agent: COSTELLO, James, A.; E.I. du Pont de Nemours and Company, Legal/Patent Records Center, 1007 Market Street, Wilmington, DE 19898 (US).		

(54) Title: POLYMERIZATION WITH LIVING CHARACTERISTICS



(57) Abstract

This invention concerns a free radical polymerization process, selected chain transfer agents employed in the process and polymers made thereby, in which the process comprises preparing polymer of general Formula (A) and Formula (B) comprising contacting: (i) a monomer selected from the group consisting of vinyl monomers (of structure $\text{CH}_2 - \text{CUV}$), maleic anhydride, N-alkylmaleimide, N-arylmaleimide, dialkyl fumarate and cyclopolymerizable monomers; (ii) a thiocarbonylthio compound selected from Formula (C) and Formula (D) having a chain transfer constant greater than about 0.1; and (iii) free radicals produced from a free radical source; the polymer of Formula (A) being made by contacting (i), (ii) C and (iii) and that of Formula (B) by contacting (i), (ii) D, and (iii); and (iv) controlling the polydispersity of the polymer being formed by varying the ratio of the number of molecules of (ii) to the number of molecules of (iii); wherein Q, R, U, V, Z, Z', m, p and q are as defined in the text.